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SEQUENCE LISTING

<110> ROMOND, Pierre-Charles
<110> RENAUD, Michel
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<110> MELNIEL, Olivier
<110> BALLUT, Lionel
<120> METHOD FOR DETECTING MICRO-ORGANISMS
<130> 344 292 - US
<150> PCT/FR 01/02 371
<151> 2001-07-20
<150> FR 00/09 600
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Primer (UNI-ADEG 1)

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<222> (9)
<223> n = a, g, c or t

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<222> (12)
<223> n = a, g, c or t

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<223> n = a, g, c or t

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<223> n = a, g, c or t

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<222> (21)
<223> n = a, g, c or t

<220>
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<222> (24)..(25)
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<400> 34
ggngayggna cnacnacngc nacnnt

26

<210> 35
<211> 26
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<220>
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Primer (UNI-ADEG 2)

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<222> (9)
<223> n = a, g, c or t

21

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<222> (12)
<223> n = a, g, c or t

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<222> (15)
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<223> n = a, g, c or t

<400> 35
ggngayggna cnacnacntg ntcnnt

26

<210> 36
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
for detecting enterobacteria (ENT-BNEW).

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<220>
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<223> n = a, g, c or t

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<222> (24)
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<400> 36
aanmttcgtc cnytrcanga ycgnct

26

22

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<220>
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for detecting bifidobacteria (BIF-BNEW).

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<400> 38
aarccrctcg aggacmrnrt nstsgt

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<210> 39
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
for detecting Lactococcus (UNI-A3).

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<220>

23

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<220>
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<220>
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<220>
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<222> (18)
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<222> (21)
<223> n = a, g, c or t

<220>
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<223> n = a, g, c or t

<400> 39
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26

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<210> 40
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<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Bifidobacterium and Mycobacterium (BIF-BNEW2).

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<223> n = a, g, c or t

<220>
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<222> (24)
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26

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<210> 41
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<213> Artificial sequence

<220>

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24

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<223> n = a, g, c or t

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<221> misc_feature
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<223> n = a, g, c or t

<220>
<221> misc_feature
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<223> n = a, g, c or t

<400> 41
ntncancnt tnggnganag ngtntt
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26

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<212> DNA
<213> Artificial sequence

<220>
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25

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<220>
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<222> (3)
<223> n = a, g, c or t

<220>
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<222> (6)
<223> n = a, g, c or t

<220>
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<220>
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<223> n = a, g, c or t

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<223> n = a, g, c or t

<220>
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<223> n = a, g, c or t

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<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 42
ntncancnct tnqqnaancg ngtntct
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26

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<210> 43
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
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<220>
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<222> (3)
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<220>
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<220>
<221> misc_feature
<222> (9)
<223> n = a, g, c or t

<220>
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<222> (12)
<223> n = a, g, c or t

<220>
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<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (18)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (21)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (24)
<223> n = a, g, c or t

<400> 43
ntnaanccnt tngcngancg ngtntct
<210> 44
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Chlamydia (CHLA-BNEW).

<220>
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<222> (1)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (3)
<223> n = a, g, c or t

<220>
<221> misc_feature
<222> (6)
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<223> n = a, g, c or t  
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<221> misc_feature  
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<223> n = a, g, c or t  
  
<220>  
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<222> (12)  
<223> n = a, g, c or t  
  
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<222> (15)  
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<222> (18)  
<223> n = a, g, c or t  
  
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<221> misc_feature  
<222> (24)  
<223> n = a, g, c or t  
  
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ntnaanccnt tnggnganag natntt
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<210> 45  
<211> 26  
<212> DNA  
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<220>  
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for detecting Mycoplasma (MYCP-BNEW).  
  
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<223> n = a, g, c or t

<220>
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<222> (18)
<223> n = a, g, c or t

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<223> n = a, g, c or t

<220>
<221> misc_feature
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<223> n = a, g, c or t

<400> 45
ntnaaacnn tnggnaancg ngtnat

<210> 16
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
for detecting Staphylococcus (STA-BNEW).

<220>
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<222> (1)
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<223> n = a, g, c or t

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<223> n = a, g, c or t

<220>
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<222> (12)
<223> n = a, g, c or t

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<223> n = a, g, c or t

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29

<223> n = a, g, c or t

<220>

<221> misc_feature

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<223> n = a, g, c or t

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<223> n = a, g, c or t

<400> 46

ntnaaacccnn tnggnaancg ngtnat

26

<210> 47

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Description of artificial sequence: Consensus sequence
for detecting Lactoccocus and Streptococcus (LACC-BNEW).

<220>

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<222> (9)

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<400> 47

ttgaaaccnt tagngraycg ygtrst

26

<210> 48

<211> 26

<212> DNA

<213> Artificial sequence

<220>

<223> Description of artificial sequence: Consensus sequence
for detecting Lactobacillus and Bacillus (LACB-BNEW).

<220>

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<222> (15)

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<223> n = a, g, c or t

<220>

<221> misc_feature

<222> (24)

<223> n = a, g, c or t

<400> 48
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26

<210> 49
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
for detecting Clostridium (CLO-BNEW3).

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<223> n = a, g, c or t

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<223> n = a, g, c or t

<220>
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<223> n = a, g, c or t

<400> 49
atnanaccan tnggngacag ngtngt

26

<210> 50
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
for detecting Enterobacteriaceae, Pasteurella, Haemophilus
(ENT-BNEW2).

<220>

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<220>
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<222> (21)
<223> n = a, g, c or t

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<222> (24)
<223> n = a, g, c or t

<400> 50
ntncgnccnt tncangancg ngtnat

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26

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<210> 51
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
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<220>
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<222> (1)
<223> n = a, g, c or t

<220>

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<221> misc_feature
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<220>
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<222> (6)
<223> n = a, g, c or t

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<220>
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<223> n = a, g, c or t

<220>
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<220>
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<222> (18)
<223> n = a, g, c or t

<220>
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<222> (21)
<223> n = a, g, c or t

<220>
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<222> (24)
<223> n = a, g, c or t

<400> 51
ntncgnccnt tncangancg ntngtngt
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26

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<210> 52
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Description of artificial sequence: Consensus sequence
      for detecting Aeromonas and Bordetella (AER-BNEW).

<220>
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<222> (1)
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<220>
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<220>
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<400> 52
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26

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<210> 53
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<220>
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<220>
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<222> (12)
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<220>
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26

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<220>
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<223> n = a, g, c or t/u

<220>
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<223> n = a, g, c or t/u

<400> 54
aaygcngayt tygayggnga ysarat

26

<210> 55
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<220>
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35

qynggncarm gnttyggnga ratgga

26

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<212> DNA
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<220>
<223> Description of artificial sequence: Primer

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<400> 56
ggnggncayg gnttyggnga ratgga

26

<210> 57
<211> 26
<212> DNA
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<220>
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ggnggncarw snllyggngaa ratgga

26

<210> 58
<211> 26
<212> DNA
<213> Artificial sequence

<220>
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<220>
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<220>
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<223> n = a, g, c or t/u

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26

<210> 59
<211> 26
<212> DNA
<213> Artificial sequence

<220>
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<222> (6)
<223> n = a, g, c or t/u

<220>
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<223> n = a, g, c or t/u

<400> 59
aaygcngayt tygayggngaa ycaraat

26

<210> 60
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<212> DNA
<213> Artificial sequence

<220>
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<222> (6)
<223> n = a, g, c or t/u

<220>
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<400> 60
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26

<210> 61
<211> 26
<212> DNA
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<220>
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<220>
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<400> 61
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26

<210> 62
<211> 26
<212> DNA
<213> Artificial sequence

<220>
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<222> (9)
<223> n = a, g, c or t/u

<220>
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<223> n = a, g, c or t/u

<400> 62

atytsrtcnc crtcaarlc ngecll

26

<210> 63

<211> 333

<212> DNA

<213> *Lactobacillus reuteri*

<400> 63

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gctaaatatg cagaagaaca taaaacacagc gataagaaga acgaagaaga aaacaagtct	180
gaagcaacctt caacaactac cgatgacaaa actaatcaaattaatattt aggttgctac	240
ggtttactga aaaaqqaqq aacatccccc gattgatgtc aataaatttg aaagtatgca	300
qatcqqtctg gcatctccag ataagatcccg tag	333

<210> 64

<211> 338

<212> DNA

<213> *Bacillus subtilis*

<400> 64

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gaaattgaac ttcgtgatat ggatgaagat tcaagtgaac acttaaacat tgattcattt	120
tcaacgtatgg cagaagaaca agaaaaaaag aagtttagccg aagaaactgg aaaatcagaa	180
gataagaaag aaaacaagaa agatgcagat aagcttagtag ctccctgcaga tgaatctgac	240
gacgaagttt ctaaatagta ggaggttaaa cttttgatec acgtaaataa atttgaaagt	300
atgcaaattt gttttgcattt acctaacaag atcagaag	338

<210> 65

<211> 329

<212> DNA

<213> *Lactobacillus gaseri*

<400> 65

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tctaagcttg ctgaacaaca agaaaaaaag aagtttagccg aagaagctgc aaagaaagat	180
gataagtcaag ccgaacctgt agatcagagt gattttcaat cttcatctga tgataagggtt	240
tctaagtaat aggaggtaa acttttgcac gacgtaaata agtttggaaag tatgcaaattt	300
ggtttggctt ctccaaacaa gatcaqaaq	329

<210> 66

<211> 296

<212> DNA

<213> *Lactobacillus paracasei*

<400> 66

cttgc当地 aatttcaagg actgggtctt gatattgaagg tccttggcgc ggataaaaaaa	60
gaaatttgc当地 tgc当地gacat ggacgacgac gaggatgata ttgtttctgt cgatgccttg	120
gccaaggttt ctgctcagca ggaagaaaag aaggctcacg aagccgc当地 acaagcaact	180
gacggtaagt ctgccaacag taccgacgat aagaaatagg aggttagccc ttgttatttgc	240
gtcaataagt ttgaaagtat gcaaatccgc ttgc当地cgc cagataaaaat ccgtat	296

<210> 67

<211> 386

<212> DNA

<213> *Lactococcus lactis*

<400> 67

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attaccccg aaatgcttga agcacaggaa gctattgttgc cacaaggcaga agctgaagaa	180
gaagcttga ttaacgctga tactaaaaaa taagaltttgc taattaatata ttgagatag	240
atttactgac aaaaatttctt gtcagtaat ctctaatctc ataatcgctt agcgttaat	300
ttatttagaag tggagaaaaga attgggttat gtaaataatata ttgagatgt gcttattgg	360
atcgcatctc cacaaaaaaat tcgtta	386

<210> 68
<211> 344
<212> DNA
<213> *Streptococcus pyogenes*

<400> 68	
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gaagtggAAC ttcgtgatct tgatgaaggt gaagacgttgc acattatgcg tggacgtt	120
ctcgagaagg cacgtgaaaa acaagctcaaa gaaactcaag aagtttcttgc aacaactgac	180
aaaaataaag caatcaattt ttattaaata attatttact ggtctggggc aaaggccccca	240
ggaactggta aagtcatcaa aggcaaaaag gtaaaacttag tggttgacgt aaatcggttt	300
aaaagtatgc aaatcacatt agcctcacca agtaagggtcc gttc	344

<210> 69
<211> 318
<212> DNA
<213> *Lactobacillus helveticus*

<400> 69	
llaatccaaag aacttcaaag cttaggtatg gatgtcaaaa tcctttctgg tgatgaagaa	60
gaaatagaaa tgagagattt agaagacgaa gaagatgcga aacaagctga cggccctggca	120
ttatcagggt atgaagagcc ggaagaaaaca gcattctgcag acgttgaacg cgatgttagta	180
acaaaagaat aatctctatg tataaaggca agtgacatcg gttatccga agataaaaaag	240
ggaggttaggc cccttgcgtatg atgtgaacaa tttttagt gttatccga agataaaaaag	300
accagataaa atccgttc	318

<210> 70
<211> 318
<212> DNA
<213> *Bacillus subtilis*

<400> 70	
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gaaatagaaa tgagagattt agaagacgaa gaagatgcga aacaagctga cggccctggca	120
ttatcagggt atgaagagcc ggaagaaaaca gcattctgcag acgttgaacg cgatgttagta	180
acaaaagaat aatctctatg tataaaggca agtgacatcg gttatccga agataaaaaag	240
ggaggttaggc cccttgcgtatg atgtgaacaa tttttagt gttatccga agataaaaaag	300
accagataaa atccgttc	318

<210> 71
<211> 304
<212> DNA
<213> *Bacillus halodurans*

<400> 71	
cttataaaag agctacagtc tctcggtatg gacgtcaaga tgctatcaag tactgaggaa	60
gagattgaaa tgaaagagct tgatgtatg gatgttcaag caagcgacaa attgttgc	120
aatattgtt caacagaatc aaatgtttaa tcaatgttcaag gggggcgtt cccctttcac	180
ttgttgcgtt aattcgatcc ctgttttttttgc acatggaaat cataaggag gttggccccct	240
tgatagacgt aaacaattttt gaggatcatgc aaatgggtct tgcttccacca aataaaaaattc	300
gttc	304

<210> 72
<211> 363
<212> DNA
<213> *Staphylococcus aureus*

<400> 72

ttgatggaaag aattacaaaag tttagggtta gatgtaaaaq ttatggatga gcaagataat	60
gaaatcgaaa tgacagacgt tgatgacgt gatgtttag aacgcaaagt agatttacaa	120
caaaatgtatg ctcctgaaaac acaaaaagaa gtactgtt aatacgtcaat ttacaaaaca	180
ggcaaaaaga tactaagctg aattttattt atgattcagt ttagtacttt aagccatccc	240
aaataaatgc aaatcaatca aatagcacag ctaatctaaa ttgaaggagg taggctcctt	300
gattgtatgt aataatttcc attatatgaa aataqqattt qttcacctt aaaaaatccq	360
ttc	363

<210> 73
<211> 352
<212> DNA
<213> *Clostridium spiroforme*

<400> 73

ttaaagaaaag agttacaagg acttgcatgg gatgtacgtt tgtagatga aatgataat	60
gaagttgata tgcgtataat tgaagaagag gaacatcggtt tcccgctgtt cattgataaa	120
gatgaagtaa ttgaaactcc aaaaactgtat gatgtttt ccgaagaaat tactgaagat	180
gatttaaatg tagaagaatgt tgacgtatgtt gaagaagata actttgagga caatgacttc	240
gaagacaatg atattgaaga aagtgaatca ttataggagg aattacatgt gcaataacaa	300
ataaatttc acgcattca attggtttag ctgcgttca gaagatcgc qa	352

<210> 74
<211> 358
<212> DNA
<213> *Clostridium leptum*

<400> 74

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gagatcgacc taaagcagaa ctttgaccgt gatgacgtt tcggcttgaa cgacggcggc	120
accattctgg aggaggatgtt agtcatgacc tccatggatg gctacaccct ggaggacgtat	180
ccggacgata acaacatgtt tgacgtatcc ggctttttt acgaagacgg agacgtatcc	240
ttggattttg atccatttc aagtgtatattt cgtgaagaat aaggaggggc gataggatgg	300
agttaaacgt ttgttgtca attaaaatcg gactggcctc tccggataaa attcgaga	358

<210> 75
<211> 376
<212> DNA
<213> *Clostridium nexile*

<400> 75

ctcctgaaag aacttcagtc actggggactt gacgtgagag tattgcgtga agatcagaca	60
gaagttgaga ttatggagac aatcgattac ggtgaaacag stttacattt aattattgaa	120
ggagacagaa gatacaattt tgagaatgaa tcttatggag aacatgtttt cagtcagcag	180
gaatttgcgtt gcgaggaact tttttttttt gaggaagatg aatttgcgtt accggatgtat	240
atcgatgtt acgatatgtt agacgaaatgg taggaggattt gccaataatgg ccagtaacaa	300
ataatgttcc agcataaccat ccgtatgtt ttgtatgcgtt caaaatcggt ttggcgtcac	360
ctgaaaaat ctggaa	376

<210> 76
<211> 391
<212> DNA

<213> Ruminococcus hydrogenotrophicus

<400> 76

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ggagatcgtc atcggtcgca ggatggatcc tacggagcaa tggatatac gaagcaggaa	180
ttttccggtg aagagcttgt agacatcgac gagagtgaag acgacagcga agacgaagat	240
gaagatttga ttgaatttga agattctt gacagagaag agtagaaaagg ggttaagaaac	300
aatggcaga aatgaacaac aatgaaacct atcagccaat gactttcgat gccatcaaaa	360
tcggactggc gtccccctgag aaaatcagag a	391

<210> 77

<211> 182

<212> DNA

<213> Chlamydia muridarum

<400> 77

ttgatcaaag aaatgcaagg tctagggtctc gatgttcgccc ctatggtagt agatgcttaa	60
aaaacacttg ttggagataa gttaatgttc aaagaagggtt ctcgagacga tgcagcccta	120
gcaaaaagaag ggttgtttga taagttagaa attgggattt cttcagatgt gactattcgc	180
ga	182

<210> 78

<211> 182

<212> DNA

<213> Chlamydia trachomatis

<400> 78

ttgatcaaag aaatgcaagg tctagggtctt gatgttcgccc ctatggtagt agatgcttaa	60
aaaacacttg ttggagagaa gttaatgttc agagaagggtt ctcgagacga tgcagccctg	120
gtaaaagaag ggctgtttga taagttagaa attgggattt cttcagatgt gactattcgc	180
ga	182

<210> 79

<211> 181

<212> DNA

<213> Chlamydophila pneumoniae

<400> 79

ctaattaaag agatqcaqqq tctaggactt gatgttcgtc ctatggtcgt agacgcttaa	60
aaaatqacqt ttggagaaa ataatgttcg gagaaaattc tcgagacatt gggtttcttt	120
ctaaagaagg actatggat aaatttagaga taggcatacg ttcagatatt acaattcgtg	180
a	181

<210> 80

<211> 181

<212> DNA

<213> Chlamydophila pneumoniae

<400> 80

ctaattaaag agatgcaggg tctaggactt gatgttcgtc ctatggtcgt agacgcttaa	60
aaaatqacgt ttggagaaa ataatgttcg gagaaaattc tcgagacatt gggtttcttt	120
ctaaagaagg actatggat aaallagaga taggcatacg ttcagatatt acaattcgtg	180
a	181

<210> 81

<211> 181

<212> DNA

<213> Chlamydophila pneumoniae

<400> 81

ctaaatggat	agatgcaggg	tctaggactt	gatgttcgtc	cataatggcg	tgacgcgtttaa	60
aaaatggat	tttggat	ataatgttcg	gagaaaaatc	tccgagacatt	ggagtttttt	120
ctaaagaagg	actatggat	aaattagaga	tggcatagc	tccagatatt	acaattcggt	180
a						181

<210> 82

<211> 225

<212> DNA

<213> Klebsiella pneumoniae

<400> 82

ttgttgaaaq	agattcggttc	gctgggtatc	aacatcgaaac	tggaaagacga	gtaattctcg	60
ctaaacacgg	tcactgctgt	cgggttaaaa	cccggcagcg	gatttgctt	actccgacgg	120
gagcaaatcc	gtgaaagatt	tatataagtt	tctgaaagcg	cagactaaaa	ccgaagagtt	180
tgatgcgttc	aaaattgctc	tggcttcgccc	agacatgatc	cgttc		225

<210> 83

<211> 225

<212> DNA

<213> Escherichia coli

<400> 83

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ctaaacacgg	tcactgctgt	cgggttaaaa	cccggcagcg	gatttgctt	actccgacgg	120
gagcaaatcc	gtgaaagatt	tatataagtt	tctgaaagcg	cagactaaaa	ccgaagagtl	180
tgatgcgttc	aaaattgctc	tggcttcgccc	agacatgatc	cgttc		225

<210> 84

<211> 225

<212> DNA

<213> Escherichia coli

<400> 84

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ctaaacacgg	tcactgctgt	cgggttaaaa	cccggcagcg	gatttgctt	actccgacgg	120
gagcaaatcc	gtgaaagatt	tatataagtt	tctgaaagcg	cagactaaaa	ccgaagagtt	180
tgatgcgttc	aaaattgctc	tggcttcgccc	agacatgatc	cgttc		225

<210> 85

<211> 225

<212> DNA

<213> Escherichia coli

<400> 85

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ctaaacacgg	tcactgctgt	cgggttaaaa	cccggcagcg	gatttgctt	actccgacgg	120
gagcaaatcc	gtgaaagatt	tatataagtt	tctgaaagcg	cagactaaaa	ccgaagagtt	180
tgatgcgttc	aaaattgctc	tggcttcgccc	agacatgatc	cgttc		225

<210> 86

<211> 225

<212> DNA

<213> Escherichia coli

<400> 86

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ctcaaacagg tcactgctgt cgggglaaaa cccygcagcg gallgtgcta actccgacgg	120
gagcaaatacc gtgaaagatt tatlaaagtt tctgaaagcg cagactaaaa ccgaagagtt	180
tgatgcgatc aaaattgctc tggcttcgccc agacatgatc cgttc	225
<210> 87	
<211> 225	
<212> DNA	
<213> <i>Salmonella typhimurium</i>	
<400> 87	
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ctcaaacagg tcactgggtgc cqqqqtaaaa cccqacacca gattgtgcta actccgacgg	120
gagcaaatacc qtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt	180
tgatqcqatc aaaattgctc tggcttcgccc agacatgatc cgttc	225
<210> 88	
<211> 225	
<212> DNA	
<213> <i>Enterobacter cloacae</i>	
<400> 88	
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ctcaaacagg tcactgggtgc cgggttaacc cccggcaccc gattgtgcta actccgacgg	120
gagcaaatacc gtgaaagatt tattaaagtt tctgaaagcg cagactaaaa ccgaagagtt	180
tgatgcgatc aaaattgctc tggcttcgccc agacatgatc cgttc	225
<210> 89	
<211> 225	
<212> DNA	
<213> <i>Citrobacter freundii</i>	
<400> 89	
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atcaaacagg tcactgggtgc tggcgtataa gccagcgcca gattgtgcta actccgacgg	120
gagcaaatacc gtgaaagatt tattaaagtt tctgaaazcg cagactaaaa ccgaagagtt	180
tgatgcgatc aaaattgcgc tggcttcgccc agacatgatc cgttc	225
<210> 90	
<211> 225	
<212> DNA	
<213> <i>Klebsiella oxytoca</i>	
<400> 90	
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ctcaaacagg tcactgggtgc cgggttaaga cccggcgcca gattgtgcta actccgacgg	120
gagcaaatacc gtgaaagact tattaaagtt tctgaaagcg caaactaaaa ccgaagagtt	180
tgatgcgatc aaaattgctc tggcatcgccc agacatgatc cgttc	225
<210> 91	
<211> 267	
<212> DNA	
<213> <i>Serratia liquefaciens</i>	
<400> 91	
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ttccagctca ggctccccggc ctttagggagc ctgaggggtgg ttgttcaggt cacacgggtg	120
cgcgatttgt cagcgtgcac ccaacaggtt taactccgac aggagccaat ccgtgaaaga	180

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<210> 92		
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<212> DNA		
<213> Serratia marcescens		
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<210> 93		
<211> 257		
<212> DNA		
<213> Morganella morganii		
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<211> 271		
<212> DNA		
<213> Proteus mirabilis		
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<212> DNA		
<213> VIBRIO CHOLERAE		
<400> 95		
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<210> 96		
<211> 214		
<212> DNA		
<213> Pseudomonas aeruginosa		
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acgctacaacg gtgcggctgg lcaaygcggg lcgccccggg tccgtgagga ggaaaggcct	120
tgaaaactt gctttatctg ttgaaaaacc agggtaaat cgaagagttc gatgccatcc	180
gtattggcct ggcttcgccc gagatgatcc gttc	214
<210> 97	
<211> 214	
<212> DNA	
<213> Pseudomonas aeruginosa	
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acgtagacg gtgcggctgg tcaaqqccqq tcgcaccggg tccgtgagga ggaaaggcct	120
tgaaaactt cttaaatctg ttgaaaaacc agggtaaat cgaagagttc gatgccatcc	180
gtattggcct ggcttcgccc gagatgatcc gttc	214
<210> 98	
<211> 212	
<212> DNA	
<213> Pseudomonas putida	
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acqcgaaagg ggttggggca ggtaatgtcg ctccctgctc cgccaggagg aaaggccttg	120
aaagactac tgattttgtc gaaaaaccag ggtcaagtgc aagagtcga cgccatccgc	180
atcggtctgg cgtcgccctga aatgatccgt tc	212
<210> 99	
<211> 228	
<212> DNA	
<213> Shewanella violacea	
<400> 99	
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ctttaggttaa ttggcaata aattttgttc ctgcatttgc ggggcaccccg gtttactcct	120
tcaggagaga aacgtgaaag acttattaaa gtttctgaaa cagcaaaagca agaccgaaga	180
atttaacggt atcaagatcg gactagcgtc accagatctg atccgctc	228
<210> 100	
<211> 393	
<212> DNA	
<213> Haemophilus influenzae	
<400> 100	
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attatataa atgggtgtca tcccttggct ccacccgttt acggggggagc tggcgcaag	120
actgggggg gatttatatac ctaagcccc ttccgccccctt cgggcacccctt ccctcgcaaa	180
gcaggsgaaag gcaagagggaa caacaacata agatttggaa tcgcccagt gcggtcaaaa	240
ttctccgaaa tttaaccg cactttaaac cttaactcc gacaggagaa catttgcgaa	300
agacttagtt aagttttaa aagcacaaatc aaaaaccagt gaagattttg atgtgattaa	360
aattgggtta gttcccccag atatgatccg ttc	393
<210> 101	
<211> 262	
<212> DNA	
<213> Pasteurella multocida	
<400> 101	

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ttcagccqca cttgaataag tttaactccg acaggagcaa atctgtgaaa gacttaglta	180
agtttttaaa agcacaatca aaaacaagtg aagatttga tgtgatcaaa attggtttag	240
cctcacccgga catgatccgt tc	262

<210> 102
<211> 306
<212> DNA
<213> Neisseria meningitidis

<400> 102	
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tttcagacgg cataagggga gctgttctgc aggtatgcgg ggcagccgac aatgtttaaa	120
aacgaatgc cgctcgaaaaa cactgtacct ctatccatat cgaaaatccg ccatgcggta	180
aaaatacttc ttcaaggag caaaaatgaa ttgttgaac ttatataatc cggtgcaaac	240
tgcggcatg gaagaagagt ttgatgccat caaaatcggt attgcctetc ccggaaaccat	300
ccgctc	306

<210> 103
<211> 311
<212> DNA
<213> Neisseria meningitidis

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gttttcagac ggctttcag ggtcgctctga aaaagtggtt tcagaataag aalgaagcaa	120
tcggcattta ggccgtctga aatcaaaaagt accglllccc aalatcyyaa atccyccatg	180
cggtaaaaat acttccttca aggagcaaaa atgaatttgc tgaacttatt taatccgttg	240
caaactgcgg qcatggaga agagtttgc gccattaaaa tcggatttgc ctctccgaa	300
accatccgct c	311

<210> 104
<211> 226
<212> DNA
<213> Buchnera sp

<400> 104	
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tagcaatatt ataaaaatatt ttatqtattt tttatattacc taaaagttt tactccaacg	120
agagctaacq tqgtaaaat ttactaaaat ttctaaaatc ccasecteaa eetgaagatt	180
ttqatqctat taaaatctcg ttagcttcac ctgatatgtat cagatc	226

<210> 105
<211> 247
<212> DNA
<213> Xylella fastidiosa

<400> 105	
ctcgtaaaag aaatccgcgc cttagcaatt aatattggat tggaagataa ctaagatgcg	60
ttgttatgga ttaattcattc tggggggagg cccagagctc cattgttctc tgggttccaa	120
tcgtccccat gccccaaattt cggagaagaa gtatgaaaga tctactcaat ctttttaatc	180
agcagcgcga gacattggat ttcgalgcua tcaagattgg cttgcctcg cttgccttg	240
tttagatc	247

<210> 106
<211> 265
<212> DNA

<213> *Caulobacter crescentus*

<400> 106

ctggcgtcaagg	aatatgcgcgtc	gclcgccctg	aacytgcgagc	tggagaacag	ctgatctgga	60
tctccctcct	cgcctgcggcc	tcttaggaag	gttggccggg	gaggggcctc	cttcagccc	120
gctctccctc	agaattttc	gcggggaaacc	ccgcagaagg	aaccaagatg	aaccaggaag	180
tcctgaacat	cttcaatccg	gtccaggccg	ctccgacctt	cgaccagatc	cgtatctcgc	240
tcgcctcgcc	ggaaaagatc	cgctc				265

<210> 107

<211> 325

<212> DNA

<213> *Mezorhizobium loti*

<400> 107

ctcggtcaagg	aatatgcggtc	tctcgccctc	aatgtcgagc	tggagaacac	caagctcgac	60
gacgccccctg	tccggctgcc	cgacgcggcc	gagtaaaggg	tacagcgcgc	cgcacgaagt	120
tgcggcgrgc	aaaggaattc	gacggccqgt	ggccgacaaa	agatggcggg	cgttggccc	180
gogactagat	gcaagggggt	ttcgaggacc	ccgaaaagga	gaacggcatg	aaccaagagg	240
tcatgaatct	cttcaatccg	caggcgccctg	cgcagggtgtt	cgattccatc	cggatctcac	300
tgcccaagccc	tgagaagatt	ctgtc				325

<210> 108

<211> 311

<212> DNA

<213> *Rickettsia prowasekii*

<400> 108

atgataaaaag	aatttagatc	tttatgtctc	aacgtaaagc	ttgaagtaac	tccaagtaaa	60
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aagccaaact	aaatgaatgt	agtgagccat	aatgttattt	tgtatttaag	ctatggagta	180
acattttaga	gtaggagaaa	tttttaggaa	aaagtattta	tgagcgtagt	taatttttat	240
ggacaattaa	gtaatactca	acaatttgac	cagataagga	ttaatatacg	cagtcctgat	300
caggtacgtt	c					311

<210> 109

<211> 188

<212> DNA

<213> *Borrelia burgdorferi*

<400> 109

ctaattgtcaag agcttagagg gcttggactt gatggtaaa tttatgtga tgctggaaat 60

caggttcctt	tgacagaaaa	ageagaagaa	ttgattaata	aaagctaggt	tttggagtt	120
tttatgaaag	agaraaaaga	ttttgaaaga	ataaaaatta	aatagcgtc	tcccgatcaa	180
attagaaa						188

<210> 110

<211> 197

<212> DNA

<213> *Treponema pallidum*

<400> 110

ttgggtgcagg	agctgcgggg	acttgcgcctc	gactttacga	tttacgatgc	gaaggggcaag	60
cagattccgc	tcactgagcg	cgatgaagaa	atgacgaata	agattggctc	taaattttaa	120
gggggtgcagg	gaatgaagga	tatccgggat	tttgacagtt	tacagataaa	gcttgcctcc	180
cctgataccca	ttegggc					197

<210> 111
<211> 159
<212> DNA
<213> *Campylobacter jejuni*

<400> 111
ttaaccaatg agcttaaatc tcttgcttta gatgttgaga tttttgataa ggatgaagat 60
aatgatgaaa tttaaagtaa tagaaattaa agaagatgc agacccatag agtttgaagc 120
atttcaacta agacttgcaa gtcctgaaaa aatcaaatac 159

<210> 112
<211> 161
<212> DNA
<213> *Helicobacter pylori*

<400> 112
ttgactaaag aatttgcatac gtcgcgttg gatattaata tttttggggga cgatgtggat 60
gaggatggag cacctaaacc cattgtcatt aaagaagatg acaggcctaa agacttttagc 120
tctttccagc tcacactagc tagccctgaa aaaatccatt c 161

<210> 113
<211> 161
<212> DNA
<213> *Helicobacter pylori*

<400> 113
ttgactaaag aatttgcagtc gtcgcgttg gatattaata tttttggggga cgatgtggat 60
gaggatggag cgcctagacc cattatgatc aaagaagatg acaggcctaa agacttttagc 120
tctttccagc tcactctagc tagccctgaa aagatccatt c 161

<210> 114
<211> 175
<212> DNA
<213> *Aquifex aeolicus*

<400> 114
ctcgtaagag agctaaaggc tcttgggcta aacgttaagt gtctgaatgg tgaagagaag 60
ccttggacg aggttgaagt taaagaggag gaagaaaaat gagtqaqca agaaqqqqa 120
tcttccccctt ctcaaaaatt aaattgatgc tcgcttctcc cgaggatatac agaag 175

<210> 115
<211> 175
<212> DNA
<213> *Aquifex pyrophilus*

<400> 115
ctcgtaggg agctcaaagg tctcagcctt aacgttaagt gtatgaacgg tgaggagaag 60
ccctgtgacc aagttgagat taaagaggag gaagaaaaat gagcacaaaa ggtaggggta 120
tcttccctt ctcaaaaatt aagcttatgc tcgcttctcc cgacgatatac agaag 175

<210> 116
<211> 293
<212> DNA
<213> *Deinococcus radiodurans*

<400> 116
ctggtaagg aactccactc gtcgggtctg gacgtcgagg tgctcgacca cggcgacaag 60

gccgtggaca	tctttgaagg	gatgalgcc	aagcgclaa	gcccgcgg	caclyccaa	120
ccgtcagca	ctglcaaacc	gltbaaggl	caaacccgcca	acatcttca	gccgttcgac	180
ggtgagacag	ttcgacqqt	tgaccaacaa	aagagcctcc	attccacagg	agcctgaatg	240
aaagacttca	acaaaagtccg	cacgcccattc	gccagccccgg	agaagatccg	cga	293

<210> 117

<211> 177

<212> DNA

<213> Thermus aquaticus

<400> 117

ctgggtggagg	agcttcaggg	cctggccctq	qacqtqcaqa	ccctqqacqa	qaaqqacaac	60
cccggtggaca	tttttqagqq	cctggcctcc	aagaggtgag	ccctttctg	gaggaaagat	120
aaaaaaaggaa	qtcqcqcaagg	tccgcatacg	cctggcctcc	ccccgagaaga	tccgctc	177

<210> 118

<211> 174

<212> DNA

<213> Thermotoga maritima

<400> 118

ctcatcaaaag	aactcagagg	tctcgcgctc	gatgtgagac	tctacgatga	gaacggtaac	60
gagatagata	tcgacaagt	ctgatggga	ggttggtaga	atgccaatgt	cctctttcaa	120
gaggaagat	aaaggaaattc	agataaagat	agcctctccg	gaagtqataa	gaag	174

<210> 119

<211> 324

<212> DNA

<213> Streptomyces coelicolor

<400> 119

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gacctgtgc	ggcgcgagcc	gagcagcgtc	aaagagggtct	gacgggagtc	aggcggggcc	180
tgtcctccac	aggccccgccc	gatcccgcga	cccccggttc	agaccacaga	tttacaaccc	240
tgagaggggat	tgacgcata	tgctcgacgt	caacttcttc	gacgagctcc	ggatcggtct	300
ggccaccgct	gacgacatcc	gtca				324

<210> 120

<211> 281

<212> DNA

<213> Mycobacterium leprae

<400> 120

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gcgatcgagt	tgctcgaaagg	tgaggatgag	gacctcgagc	gggctgcggc	caacctcggt	120
atcaacttgt	cccgcaacga	atcggcgatcc	atagaagatc	tggcttagcg	aacttggcat	180
tatcgtaact	aaaccgc	ggggaaagg	agttacgtgc	tagacgtcaa	cttcttcgat	240
gaactccgea	ttggcctggc	tacccggag	gacatcg	a		281

<210> 121

<211> 277

<212> DNA

<213> Mycobacterium tuberculosis

<400> 121

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gcgatcgaaac	tgctcgaaagg	tgaggacgag	gacctggagc	ggccgcggc	caacctggga	120

50

atcaatctgt cccgcaacga atccgcaagt gtcgaggata ttgcgtaaag ctgtcgcaaa	180
attactaac ccgttaggg aaagggagtt acglgclega cylcaacllc tlcgatgaac	240
lccycatcgg tcttgcatacc gcggaggaca tcaggca	277
<210> 122	
<211> 277	
<212> DNA	
<213> <i>Mycobacterium tuberculosis</i>	
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gcgatcgaac tgcgcaagg tgaggacag gacctggagc gggccgcggc caacctqqa	120
atcaatctgt cccgcaacga atccgcaagt gtcgaggatc ttgcgtaaag ctgtcgcaaa	180
attactaac ccgttaggg aaqqqagtt acgtgctcga cgtcaacttc ttgcataac	240
tccgcatacg tcttgcatacc gcggaggaca tcaggca	277
<210> 123	
<211> 192	
<212> DNA	
<213> <i>Porphyromonas gingivalis</i>	
<400> 123	
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tgtgattata gtttttccat catcagaata aatctccccat tatatagtta tggcattcaa	120
aagagataaca aagataaaagg ccaacttcac ccgtattaag atcggtatcg cttctcccga	180
agggattttt ga	192
<210> 124	
<211> 257	
<212> DNA	
<213> <i>Mycoplasma genitalium</i>	
<400> 124	
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caacaagact ccaataatgt ttccatcttgc caaagtgtat gggaaacaaga tgaatttttc	120
aatgatttttgc aatttgacac tgagggttat tagaaatttaa caatgacaac aacaagacgt	180
aataaaaagaa ataataagct ttataaaaac attaaagcaa ttaaaacttcc catcgcttcc	240
aatgacaccca ttttggaa	257
<210> 125	
<211> 245	
<212> DNA	
<213> <i>Mycoplasma pneumoniae</i>	
<400> 125	
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caacaagatt ccaacaacgt ttcaattctc caaagtgtat gagaacagga cgatctcttt	120
aatgacttttgc aatttgacac ggagggttat taattaaatgt caaagcgtaa taaaagaaac	180
aacaagctgt acaagaacat taaggcaatt aagcttccga ttgcttccaa cgacacgatc	240
ctaaa	245
<210> 126	
<211> 305	
<212> DNA	
<213> <i>Ureaplasma urealyticum</i>	
<400> 126	
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atggtagata ttaatgaata tacactaat caaaatcglt taalalaalge cgalgalgag	120
qttattttag ataaaaatct aaadyyagalc aulgattcta atgaagaaat atttaataaca	180
aactttaata ataatgacta lgatgatgaa gagaacttct aaataataga aaggtaaaat	240
aatatgaglc aaaaaggat taaatcatta acgatttcca ttgcttcacc tgaacaaatt	300
llaaa	305
<210> 127	
<211> 244	
<212> DNA	
<213> <i>Mycoplasma pulmonis</i>	
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aaacaagaac tbeccaagcca agaatatgaa agtttaatc ttgateaaga gctaaaaaca	120
qcttcqaaa atgttagtga aagttagtt taattatgccc aaaaactaga aaatattcaa	180
cagttagtga agaaaagatt taaaagtta gcttatctct tgcaactaaa gaagatgttt	240
taga	244
<210> 128	
<211> 202	
<212> DNA	
<213> <i>Plasmodium falciparum</i>	
<400> 128	
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acaaataattt tatttagaaaa tttagctatt aatataatctt attaataatg ataatacata	120
ataatataaa tttagttagga taaaattaa atatattaaa tcctaaacaa ataataaaaat	180
ggtcttcattt attttataaa aa	202
<210> 129	
<211> 136	
<212> DNA	
<213> <i>Archaeoglobus fulgidus</i>	
<400> 129	
cttctggatg agctgaagtc aatgatgatc gctccgagaa taattctcg agataaggca	60
tgaggtgaaa tgagatggta ccgaagagga tttagccat taaatttgag gttctctccc	120
cccaagagat aagaag	136
<210> 130	
<211> 169	
<212> DNA	
<213> <i>Methanothermobacter thermoautotrophicus</i>	
<400> 130	
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tgataatgga tttagggaa taacaaaaag gagagaatac ctttagaggg attttaaaga	120
aaatttcccc gataaaactt ggcctcatgt ccccccggagga tatcaggaa	169
<210> 131	
<211> 136	
<212> DNA	
<213> <i>Halobacterium sp</i>	
<400> 131	
ctactcgacg agatgaaggc gctcgccatc gcgcgcgcgc tggactgga ggaggcagtgc	60
taatgagtgc aggacaaagcc cccaaaggaaa tcggcgaaat cagcttcggg ctgtatggacc	120
cagaggagta ccgcga	136

<210> 132
<211> 127
<212> DNA
<213> *Thermoplasma volcanium*

<400> 132
atgaggggatg agctgatatac tctcygtgtt gttatgcgtc ttatgttggg tgatatgaaa
tgatggaaat ttcttaaaga atttcaagta ttaaattttgc gcttctttct ccagacgaga
taagaaaa 60
120
127

<210> 133
<211> 127
<212> DNA
<213> *Thermoplasma acidophilum*

<400> 133
atgaggggatg agctgatctc tctcggtgtt gttatgaggt taatgctcggt tgatatgaaa
tgatggaaat atcaaaaaga atttcataa taaaattttgc ccttctttct ccggatgaga
taagaaaa 60
120
127

<210> 134
<211> 141
<212> DNA
<213> *Sulfolobus acidocaldarius*

<400> 134
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aacttaggag gtgcctcaaa tgagtgagaa gattatacgg ggcgtaaaat ttgggttatt
atcacctaataa gaaataaggc a 60
120
141

<210> 135
<211> 145
<212> DNA
<213> *Sulfolobus solfataricus*

<400> 135
ttaattcaag aactaatgag tatqattatac tcacctaaggat tagttttqqa ggataaaagtt
ggattaaggatq qaqggttaagg gaaatgagtg aaaagaatat aaaaggaata aagtttggaa
tacttctcc tgacgaaata agaaa 60
120
145

<210> 136
<211> 134
<212> DNA
<213> *Pyrococcus abyssi*

<400> 136
ctcttggatg agcttaaggc catggttatt aggccaaagt taaacctcac ggagagggtg
tgagctatgc aatccgttaa gaaggttatac ggttagtatac agtttggaaat tctctcccct
caagaaaattttaa gaaa 60
120
134

<210> 137
<211> 134
<212> DNA
<213> *Pyrococcus horikoshii*

<400> 137

53

cttctggatg agcttaaggc talgglygall agacctaagt taaacccac ggagagggtg	60
tgagccatgc actcayllua ggagggtata gtagtatttg aatttgaat actttcccct	120
caagaatatta ggaa	134

<210> 138
<211> 224
<212> DNA
<213> Aeropyrum pernix

<400> 138	
ctgcgtcgagg agataaccag tatgtatgata aagccggaac tcaaggtagc cgacaagata	60
tccgtcatca gaaaagtctgt cggcqactat acatgattac cccattttaa ttctcgatt	120
tccgggggtgt tgggtqctat gtctctaagg ctctcgaggt tccgcgagac aaaccttcta	180
gataaatac tcttggcgt cttaagcccc catgagataa ggca	224

<210> 139
<211> 26
<212> DNA
<213> Artificial sequence

<220>
<223> Primer

<220>
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<220>
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<223> n = a, g, c or t/u

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<223> n = a, g, c or t/u

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<223> n = a, g, c or t/u

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<222> (21)
<223> n = a, g, c or t/u

<220>
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<222> (24)
<223> n = a, g, c or t/u<400> 139
marccnnntng gngaymgngt natngt

26

<210> 140
<211> 186
<212> DNA
<213> Pasteurella multocida

<400> 140

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gaataatttt lalcaacaac acaaatacg tatttctata aataaacaaa cttaaaatag	120
caatttgcattt aacaagattc gaaatgagag gaagataaaa aatggcagca aaagacgtaa	180
aatttg	186
<210> 141	
<211> 113	
<212> DNA	
<213> <i>Haemophilus influenzae</i>	
<400> 141	
gaaaaaaatcg atggtaaga aqtqtaatc atttctqaaa acqacatcct aqcaattqta	60
gaataattat taaataaqqq aaaagaaaat ggcagaaaa gaoftaaaat ttg	113
<210> 142	
<211> 113	
<212> DNA	
<213> <i>Haemophilus ducreyi</i>	
<400> 142	
gaaaaaaattg atggcgaaga aatttaattt ctccagaga atgacattct tgcaattgtt	60
gaataatcg aqataaggg ataataaaaat ggcaataaaa gacgttaat ttg	113
<210> 143	
<211> 137	
<212> DNA	
<213> <i>Buchnera aphidicola</i>	
<400> 143	
gaaaaaaattg ataacgaaga attattaattt ctaactgaaa gcgcacatttt agcaattgtt	60
gaatagtaaa ccacatgcta tatcattgaa aattgatttta agggatgtc aatggccgc	120
taaagatgtt aaatttg	137
<210> 144	
<211> 139	
<212> DNA	
<213> <i>Myzus persicae</i>	
<400> 144	
gaaaaaaatta atactqaaga gttattactt ttaactgaaa gtgacatttt agcaattgtt	60
qaataqtaaa ctatatgcta tatccatttta aaaaattttt taaggaaatg tcaaatggcc	120
gctaaagatg taaaatttg	139
<210> 145	
<211> 144	
<212> DNA	
<213> <i>Vibrio cholerae</i>	
<400> 145	
gaaaagatcg atggcaaaga agtgctgatc ttggctgaac atgacatttt ggcaatcggtt	60
gaataattgtt ttctgaatcc caacgaaatc aataactgaa tttagaaagg aaatgaaaaa	120
tggctgctaa agacgtacgt ttg	144
<210> 146	
<211> 137	
<212> DNA	

<213> Escherichia coli

<400> 146

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60
120
137

<210> 147

<211> 137

<212> DNA

<213> Escherichia coli

<400> 147

gagaqaqatcg acaatgaaga agtgttgatc atgtccgaaa gcgcacattct ggcaattgtt
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60
120
137

<210> 148

<211> 137

<212> DNA

<213> Escherichia coli

<400> 148

gagaqaqatcg acaatgaaga agtgttgatc atgtccgaaa gcgcacattct ggcaattgtt
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 taaagacgta aaattcg

60
120
137

<210> 149

<211> 142

<212> DNA

<213> Pseudomonas putida

<400> 149

gtgaaagtcg atggcgaaga cctgtggta atggccgaga acgagattct cgccgttatac
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 gctgttaaag acgtaaaatt cg

60
120
142

<210> 150

<211> 144

<212> DNA

<213> Pseudomonas aeruginosa

<400> 150

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 tggctgccaa agaagttaag ttcg

60
120
144

<210> 151

<211> 186

<212> DNA

<213> Neisseria meningitidis

<400> 151

gtaaaaagccg acggcgaaga gctgtggta atgcgcgaag aagatatttt cggcattcgat
 gaaaaataaa tacggacacg atgccgtctg aaacggcaaa ccgccttcag acggcataaa
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 aattcg

60
120
180
186

<210> 152
<211> 186
<212> DNA
<213> *Neisseria meningitidis*

<400> 152
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gaaaaataaaa tacggacacg atgccgtctg aaacggcaaa ccgccttcag acggcataaa
cggttttatac agacagtttt aatgatTTT ggagaattga aatggcagca aaagacgtac
atTCG 60
120
180
186

<210> 153
<211> 185
<212> DNA
<213> *Neisseria gonorrhoeae*

<400> 153
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gaaaaataaaa tacggacacg atgccgtctg aaacggcaaa ccgccttcag acggcataaa
cggttttatac agacagtttt aagatTTT gagaattgaa atggcagcaa aagacgtaca
atTCG 60
120
180
185

<210> 154
<211> 201
<212> DNA
<213> *Xylella fastidiosa*

<400> 154
tacaaggctg aaggcgtcga atacaaagta ttacgcgagg acgacatcct ggcgatcatc
ggTTgattaa gccaagcccg aaactcgtga atgcatccga catatcacgc caacagcggg
cacattgttc catacatcac taatgttctc atcgcgaatc ttggagtaaa aacataatgg
ctgcCAAAGA aattatTTTC a 60
120
180
201

<210> 155
<211> 224
<212> DNA
<213> *Streptomyces coelicolor*

<400> 155
gtgaagtaca acggcgagga gtacctcgtc ctctcgcccc gcgcacgtgt cgcgatcgtc
gagaagtaga agtagtactt cgcttcaccg aagcacctt cttccagct gcccggctgg
ctcccgccac cataaaaaagc cggggcgtcgg gggcgcagtt gccgtataac cccaaagattt
ccggaagagg gtcacgcctc ccatggcgaa gatcctgaag ttcg 60
120
180
224

<210> 156
<211> 185
<212> DNA
<213> *Mycobacterium tuberculosis*

<400> 156
alcaagtaca acggcgagga atacctgatc ctgtcggcac gcgcacgtgtt ggccgtcggtt
tccaaagtgtt agagcgtgtt ccgcggcgc gatccccgtt ctcaccacgg gtgatttccg
gggcggcgtt ctttagcgaa ctagccctgc gtagaggac ctgtatgagca agctgtatcga
atACG 60
120
180
185

<210> 157
<211> 185
<212> DNA
<213> *Mycobacterium tuberculosis*

<400> 157
atcaagtaca acggcgagga atacctgatc ctgtcgccac qcqacgtgct ggccgtcggtt
tccaaagtatg agagcgtgtt ccgcggcgc gatccccgtg ctcaccacgg gtgatttccg
gggcggcatg cgtagcgga ctagccctgc ytagaggagc ctgatgagca agctgatcga
atacg 60
120
180
185

<210> 158
<211> 169
<212> DNA
<213> *Mycobacterium leprae*

<400> 158
atcaagtaca atggcgagga atacctgatc ctgtcgccac gtgacgtgct ggctgtcgta
tccaaagtaac gaaccgtgtt ccgcggcgc gatccccgtg cttAACACCG ggtgatttcc
ggggcggcat gcgtttaag gagectgatg agcaagctga ttgagtaeg 60
120
169

<210> 159
<211> 103
<212> DNA
<213> *Thermus aquaticus*

<400> 159
attgagattg caccgcgaag gacgtacgtg atccctcccg agcgcgacct gcttgcggtc
ctgcagtaaa ggaggtgaac catggcgaaatccctgggttg 60
103

<210> 160
<211> 100
<212> DNA
<213> *Thermus thermophilus*

<400> 160
attgagattg acggcgagga gtacgtgatc ctctccgagc gcgacctgct tgcggtcctg
cagtaaagga ggtgaaccat ggcgaagatc ctgggttttg 60
100

<210> 161
<211> 100
<212> DNA
<213> *Thermus thermophilus*

<400> 161
attgagattg acggcgagga gtacgtgatc ctctccgagc gcgacctgct tgcggtcctg
cagtaaagga ggtgaactat ggcgaagatc ctgggttttg 60
100

<210> 162
<211> 162
<212> DNA
<213> *Deinococcus radiodurans*

<400> 162
gtcagcctcg aaggcaagaa ctacagcctg ctgagcgagc gcgacctgct cggcattgtc
gagtaaggct ccgagtcaagg ttctgagcct gttcggtttcc tgtttttctt cctcatttca
cttttcaagg agcaatcaca atggctaaac agctcggtt tg 60
120
162

<210> 163
<211> 121
<212> DNA
<213> *Porphyromonas gingivalis*

<400> 163
atagagctgg agggcgaaaa atatatcatc atgcgcacaa acgatgttggcaatcatc
taattcttag agacaataac ctacaataaa aaataaagac tatggcaaaa gaaatcaaatt
60
120
121

<210> 164
<211> 134
<212> DNA
<213> *Bacillus subtilis*

<400> 164
gtgaataacg aaggtaactga atacttaatc ttacgtgaaa gcgcacatttt agctgttatc
ggcttaattct taaataaaaca atacttaaaa catttgagga ggtcttgaa acatggcaaaa
60
120
134

<210> 165
<211> 180
<212> DNA
<213> *Bacillus halodurans*

<400> 165
gtaaaatatg atggtaaaaga gtatllaalc ctgcgtgaaa gcgcacatttc cgcgatttt
ggcttaatttt acgttagggll atccctacat acatgttggaa cgagagggttt ttgtctattc
ctctttgtt aataaccatt caggagggtt agaataacat ggcaaaagat attaagttt
60
120
180

<210> 166
<211> 121
<212> DNA
<213> *Lactobacillus zae*

<400> 166
gtgaagtatg aaggtaaaga ctaccttgta ttgcattgaaa aagacatcat ggcaattgcg
taactaaata atcgatcaat tttgaggtga ataaaaacaa tggcaaaaga aattaaatttc
60
120
121

<210> 167
<211> 142
<212> DNA
<213> *Clostridium perfringens*

<400> 167
gttaagttcg agggggaaaga atatactatt ttaagacaag acgatataact agcaatagt
gaatagtttt aaaaataaag tgatttagat attcataata tatttggag gtaaaatttaat
60
120
142

<210> 168
<211> 120
<212> DNA
<213> *Clostridium difficile*

<400> 168
gttaagatag aaggacaaga atacacaata ctaagacaga gtgatgttatt agctgttatt
gaataaaat aaaaaaaaaat tattaggagg ggttttttttt ggctaaagaa attaaatttt
60
120

<210> 169
<211> 129
<212> DNA
<213> Clostridium acetobutylicum

<400> 169
ataaaagttg acaatgaaga attgttaatt ttaagacagg acgatatttt aggaatttga
gaagaataag ctatcaattt tgtaataat tcagggaggg attctaaatg gcaaagcaaa 60
tatlatacg 120
129

<210> 170
<211> 141
<212> DNA
<213> Lactobacillus helveticus

<400> 170
gttgaatacg aaggtgaaaa gtacttagtc cttcatgaaa aagacatttt agcaattgca
aaataatttga cgcattttt agaaattaaa atacgagatt aaggaggcat agataatcta 60
tggcaaaaga tattaaatcc t 120
141

<210> 171
<211> 118
<212> DNA
<213> Lactobacillus johnsonii

<400> 171
ttgaagtacg aaggcgaaaa gtacttagtt cttcgtgaaa gcgacttatt agctgtcggtt
aagtaataaa atttggaaa aaagggtggca tataalalgg classagagal laaalltt 60
118

<210> 172
<211> 143
<212> DNA
<213> Staphylococcus epidermidis

<400> 172
gtaaaacgtg gcgcacaaac atattaatt ttaaatgaag aagatattttt agcttattata
gaataaaagag cgaattttaa atattaatta aatgattttaa taagtggagg ttgttttagac 60
tatggcaaaa gatcttaat tct 120
143

<210> 173
<211> 163
<212> DNA
<213> Staphylococcus aureus

<400> 173
gttaaacgtg ataatgaaaac atatcttagta ttaaatgaag aagatattttt agcggtaatt
gaataatata aaattttttt catagataaa ttgtttttttt cggaaatgaa atatgactaa
acaatggag gtttattttt tatggtaaaa caattgaaat tct 60
120
163

<210> 174
<211> 106
<212> DNA
<213> Streptococcus pneumoniae

<400> 174
gtcaaagatg gcgatgaaaa gtacatcatc gttaggcgaag ctaacatccc ggcaatcatt
gagggataga aggagaaagt aagtatgtca aaagaaatata aattttt 60
106

<210> 175
<211> 175
<212> DNA
<213> *Lactococcus lactis*

<400> 175
gtaaaaatgg atggtaaga attcttgatt ctcagaaattt cagacccctt tgcaatttgc
gatgtttttt ataaaagcaa tcattttttt gtttgtctt tgtctatctt aaaaatctata
aaataaaaaa tatattctta aaaaggagct aaaatgtcaa aagatattaa atttt 60
120
175

<210> 176
<211> 111
<212> DNA
<213> *Rickettsia prowasekii*

<400> 176
attgaaataa aaggagaaaa atttaatcggtt atgaaagaaaa gcgtatgtatt tggattattt 60
aattaattat tttttaggaga aaaaaatgtaa caacgaaact tattaaacac g 111

<210> 177
<211> 129
<212> DNA
<213> *Chlamydia muridarum*

<400> 177
ctcaactgtcg aaggtaaga atatgtcatc gttcaaatgtt gcaagtttat agcagtccctg
caataaaaaac taagagatgtt aagtaagattt taaggagcgc atcgatggtc gctaaaaata 60
120
129

<210> 178
<211> 128
<212> DNA
<213> *Chlamydia trachomatis*

<400> 178
cttactgtcg aaggtaaga gtacgtcatc gttcaaatgtt gcaagtttat cgcaatgttctg
caataaaaaac taagagatgtt aagaagattt aaggagcgc tcaatggtc ctaaaaaacat 60
120
128

<210> 179
<211> 132
<212> DNA
<213> *Chlamydophila pneumoniae*

<400> 179
atcacaaatcg atgacgaaga gtatgtcatt ctacagtccca gtgaaatcat ggccgtccta 60
aaataaaaaata ctatgttgcg gattatagaa agttaaggag aacaacgttg gcagcgaaaa
atattaaata ta 120
132

<210> 180
<211> 132
<212> DNA
<213> *Chlamydophila pneumoniae*

<400> 180
atcacaaatcg atgacgaaga gtatgtcatt ctacagtccca gtgaaatcat ggccgtccta 60
aaataaaaaata ctatgttgcg gattatagaa agttaaggag aacaacgttg gcagcgaaaa
120

atattaaata ta

132

<210> 181
<211> 132
<212> DNA
<213> Chlamydophila pneumoniae

<400> 181
atcacaaatcg atgacgaaga gtagtcatt ctacagtccca gtgaaatcat gcccgctc
aaataaaaata ctagttgc gattatagaa agttaaggag aacaacgatg gcagcgaaaa
atattaaata ta

60
120
132

<210> 182
<211> 141
<212> DNA
<213> Chlamydophila caviae

<400> 182
cttaccgttg atggtgagga gtacgtcatt gttcaggaaa gcgaagttat ggcagttctc
aagtaagaga aatcattatt tatagattgc aaaaagttaa ggagcacaaaa aaaacaatgg
cagcaaaaaaa tattaaatat a

60
120
141

<210> 183
<211> 160
<212> DNA
<213> Helicobacter pylori

<400> 183
ctagaagaca ttctaggcat tgtggctca ggctcttgtt gtcatacagg taatcatgac
ctaaacatg ctaaagagca tgaagcttgc tgtcatgatc acaaaaaaca ctaaaaacat
tattattaag gataaaaaat ggcaaaagaa atcaaatttt

60
120
160

<210> 184
<211> 160
<212> DNA
<213> Helicobacter pylori

<400> 184
ctagaagaca ttctaggtat tgtqqqctca ggctcttgct gtcatacagg taatcatgac
ctaaacatg ctaaagaaqca tgaagcttgc tgtcatgatc acaaaaaaca ctaaaaacat
tattattaag gataaaaaat ggcaaaagaa atcaaatttt

60
120
160

<210> 185
<211> 72
<212> DNA
<213> Campylobacter jejuni

<400> 185
tttagatgata tccttaggaat tttaaaataa tttataaaaa aggataaaaa atggcaaaag
aaattatttt tt

60
72

<210> 186
<211> 136
<212> DNA
<213> Clostridium thermocellum

<400> 186
gtaaaatttg acggacagga atatacgatc ttaagacaaa acgatatttt ggcggtagta
gagtaattat attaccaact tcaatacataa aagtatccta aggaggttaa tcatatggca

60
120

62

aagcaaataa aatttg

136

<210> 187

<211> 127

<212> DNA

<213> Mycoplasma genitalium

<400> 187

tttgagaatg agggaaacaa gtacaaaatt attggatttg aggatgtact tgcctttgaa
aaaccagaaa gtggtaagca aagaaaaaga taaaattaaa caattatggc aaaggaatta
atcttg

60

120

127

<210> 188

<211> 138

<212> DNA

<213> Mycoplasma pneumoniae

<400> 188

tttgaagagg aaggtagccaa gtacaagatt atttccttgg aagatgtcct tgctttgaa
aagcatggta atacaaaaaac tactactgta aagaaaggag ctaagaaaaa atagttatgg
caaaggaaatt agtatttg

60

120

138

<210> 189

<211> 120

<212> DNA

<213> Aquifex aeolicus

<400> 189

gttagagattg aaggaaagat ttacctcggtt atgtctgaag acgaagtttt agctgttgtt
gaagatttatt caagcttaat aggaggtgag gtgagatggc agcaaaggca attatctaca

60

120